

AMENDMENTS TO THE CLAIMS:

Please amend claim 1 and add newly written claims 10-21 as follows.

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A signal processing system comprising:

at least two independent processing channels,

a plurality of optical fibres arranged in a known array with their one ends oriented to receive electromagnetic radiation, said fibres arranged to cause varying delays in the transmission of electromagnetic radiation passing therethrough; and

couplers interconnecting the other ends of said optical fibres in parallel whereby electromagnetic radiation transmitted by said optical fibres is coupled together and then directed into each of the independent processing channels.

2. (previously presented) A signal processing system, according to Claim 1, in which at least one of said independent processing channels includes a processing board with an output to a signal detector.

3. (previously presented) A signal processing system, according to Claim 2, in which at least one of said processing boards includes signal processing components selected from the group comprising electrical and optical signal processing components.

4. (previously presented) A signal processing system, according to Claim 1, in which at least one of said independent processing channels is arranged to transmit the electromagnetic radiation in sequence to a signal detector input.

5. (previously presented) A signal processing system, according to Claim 4, in which another of said independent processing channels is arranged to transmit the electronic radiation in sequence to another signal detector input, and said independent processing channels incorporate different optical delays to minimise any range/position ambiguity.

6. (previously presented) A signal processing system, according to Claim 1, in which one of said independent processing channels is arranged to transmit electromagnetic radiation in sequence to a signal detector unit, and another of said independent processing channels is arranged to transmit the electromagnetic radiation to a processing board configured to assess the range and depth of a target.

7. (previously presented) A signal processing system, according to Claim 1, in which two of said independent processing channels contain different signal detectors.

8. (previously presented) A signal processing system, as in Claim 1, in which at least one of said independent processing channels is arranged to feed signals into at least one other independent processing channel.

9. (cancelled).

10. (new) A signal processing system comprising:
at least two independent processing channels,
a plurality of optical fibres arranged in a known array with their one ends oriented to receive electromagnetic radiation, said fibres comprising a means for varying delays in the transmission of electromagnetic radiation passing through said fibres; and
couplers interconnecting the other ends of said optical fibres in parallel whereby electromagnetic radiation transmitted by said optical fibres is coupled together and then directed into each of the independent processing channels.

11. (new) A signal processing system, according to Claim 10, in which at least one of said independent processing channels includes a processing board with an output to a signal detector.

12. (new) A signal processing system, according to Claim 11, in which at least one of said processing boards includes signal processing components selected from the group comprising electrical and optical signal processing components.

13. (new) A signal processing system, according to Claim 10, wherein said means for varying delay comprises fibres of differing fibre length.

14. (new) A signal processing system comprising:
at least two independent processing channels,

a plurality of optical fibres arranged in a known array, each fibre having two ends, the end of each fibre oriented to receive electromagnetic radiation, each fiber having a length different from other fibres and providing a different delay to transmission of electromagnetic radiation through said fibre; and

couplers interconnecting the other ends of said optical fibres in parallel whereby electromagnetic radiation transmitted by said optical fibres is coupled together and then directed into each of the independent processing channels.

15. (new) A signal processing system, according to Claim 14, in which at least one of said independent processing channels includes a processing board with an output to a signal detector.

16. (new) A signal processing system, according to Claim 15, in which at least one of said processing boards includes signal processing components selected from the group comprising electrical and optical signal processing components.

17. (new) A signal processing system, according to Claim 14, in which at least one of said independent processing channels is arranged to transmit the electromagnetic radiation in sequence to a signal detector input.

18. (new) A signal processing system, according to Claim 17, in which another of said independent processing channels is arranged to transmit the electronic radiation in sequence to

another signal detector input, and said independent processing channels incorporate different optical delays to minimise any range/position ambiguity.

19. (new) A signal processing system, according to Claim 14, in which one of said independent processing channels is arranged to transmit electromagnetic radiation in sequence to a signal detector unit, and another of said independent processing channels is arranged to transmit the electromagnetic radiation to a processing board configured to assess the range and depth of a target.

20. (new) A signal processing system, according to Claim 14, in which two of said independent processing channels contain different signal detectors.

21. (new) A signal processing system, as in Claim 14, in which at least one of said independent processing channels is arranged to feed signals into at least one other independent processing channel.